W. GRETHER.

PORTABLE ELECTRIC LANTERN.

APPLICATION FILED JULY 27, 1918.

1,291,483.

Patented Jan. 14, 1919.

2 SHEETS—SHEET 1.

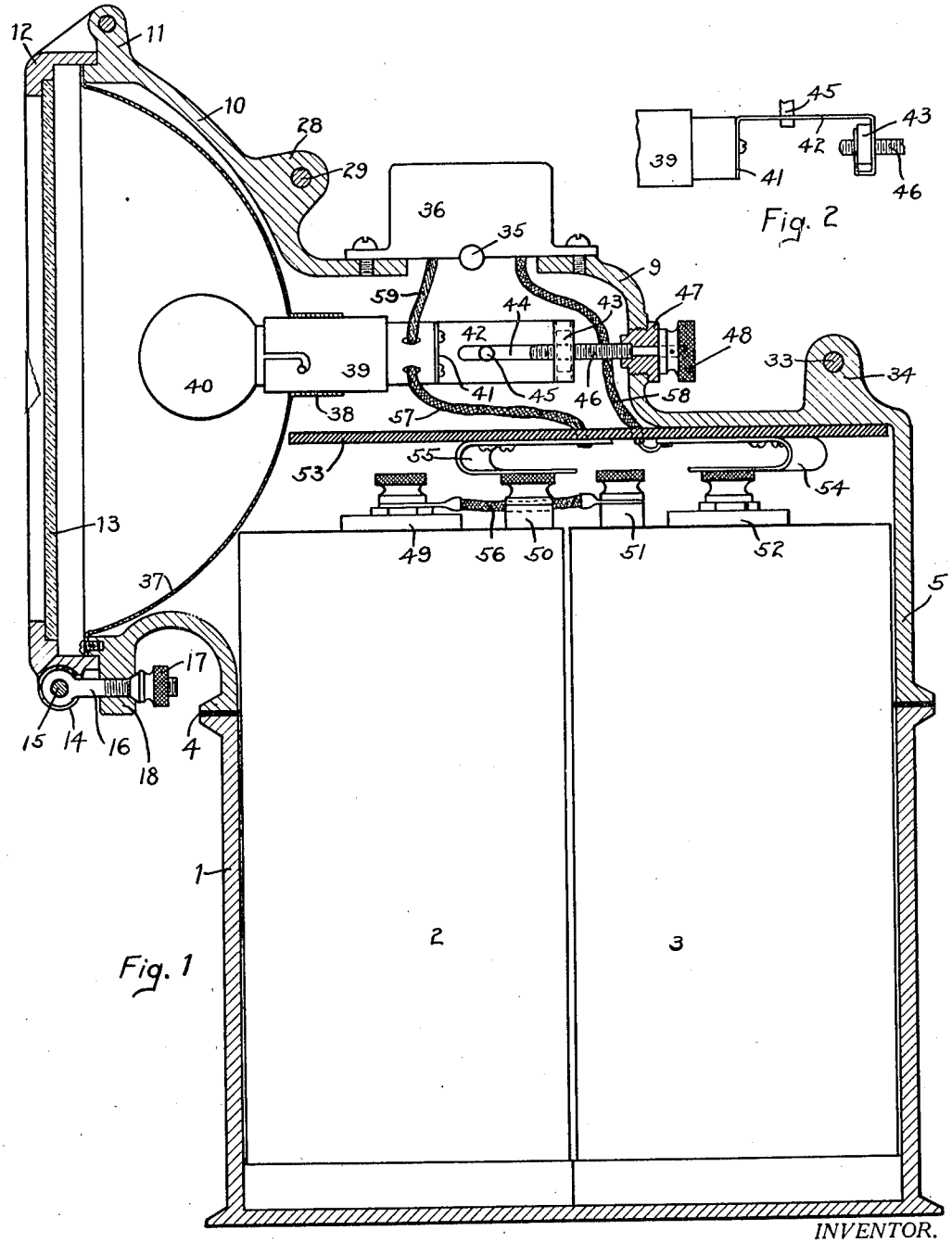


Fig. 1

Fig. 2

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W. GRETHER.

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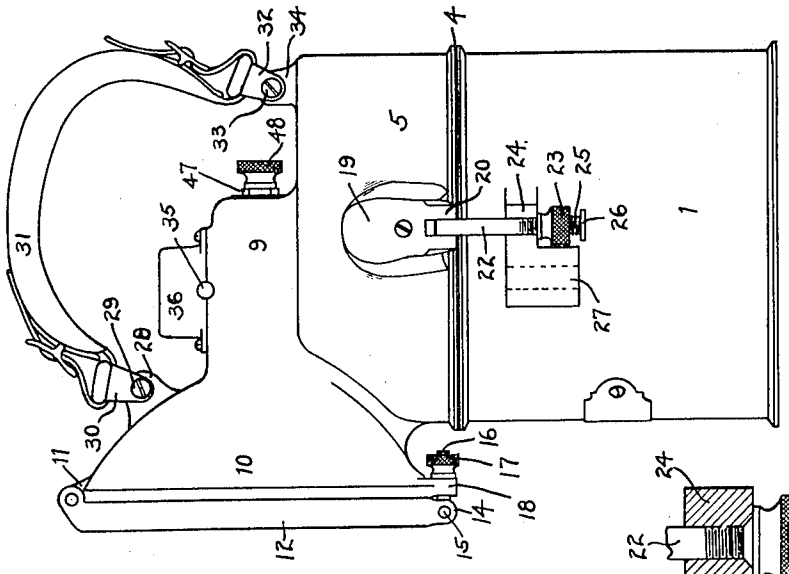


Fig. 4

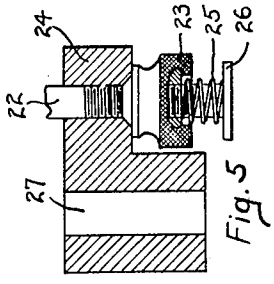


Fig. 5

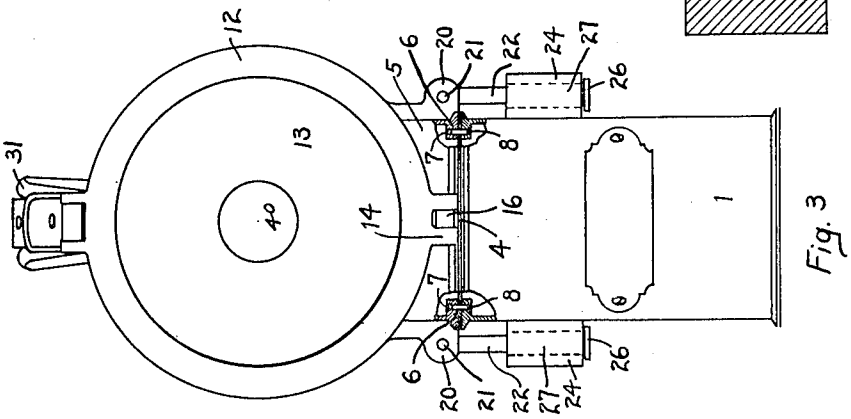


Fig. 3

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UNITED STATES PATENT OFFICE.

WILLIAM GRETHER, OF DAYTON, OHIO.

PORTABLE ELECTRIC LANTERN.

1,291,483. Specification of Letters Patent. Patented Jan. 14, 1919.

Application filed July 27, 1918. Serial No. 247,021.

To all whom it may concern:

Be it known that I, WILLIAM GRETHER, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Portable Electric Lanterns, of which the following is a specification.

This invention relates to new and useful improvements in portable electric lanterns.

The principal object of the invention is to provide a simple, convenient and efficient portable electric lantern for use on fire, army and other automotive trucks, boats and other means of transportation. It is so light, compact and readily handled, that its field of use is almost unlimited, it being particularly adapted for army and navy service.

The invention contemplates means for making the upper and lower portions of the lantern separable, the battery being contained in the lower and the illuminating mechanism in the upper part of the lantern, with means for making an instantaneous connection between the battery and illuminating mechanism when the upper portion of the lantern is applied to its lower part.

It is another object of the invention to provide means for securely, yet removably, connecting the upper portion of the lantern to its lower part, with no danger of the connecting nuts working loose.

Another object of the invention is to provide a switch and focusing device so located on the upper portion of the lantern that they may be operated while the latter is being carried, the handle extending from the reflector casing to the rear part of the top portion of the lantern directly above said switch and focusing device.

Another object of the invention is to provide a hinged lens holder for the lantern, whose free end may be securely, yet removably, fastened to the lower part of the reflector casing.

Other important and incidental objects will be brought out in the following specification, and particularly set forth in the subjoined claims.

The preferred form of embodiment of my invention is illustrated in the accompanying drawings, of which Figure 1 is a vertical sectional view of my improved portable electric lantern. Fig. 2 is a detailed view of a portion of the focusing device. Fig. 3 is a front elevational view of the said lantern. Fig. 4 is a side elevational view of the lantern. And Fig. 5 is an enlarged detail view of the means employed for making secure the locking nut on one of the connecting arms.

Throughout the specification and drawings, similar reference characters designate corresponding parts.

In a detailed description of the preferred form of embodiment of the invention, the numeral 1 designates the lower portion of a portable electric lantern. This lower lantern portion 1 is preferably elliptical in cross section, and is adapted to receive two dry cells 2 and 3. A storage battery may be employed therein if desired.

Adapted to be placed upon a gasket 4 on top of the lantern portion 1, is a cover 5 whose construction will now be described. The base of the cover 5 is formed to conform with the shape of the lantern portion 1, containing at each extremity of its minor axis an ear 6 containing an aperture 7 adapted to receive a guide pin 8 projecting upwardly from an ear at the extremity of the minor axis of the top of the lower lantern portion 1. These guide pins 8, 8 assist in holding the cover 5 securely in place upon the lower lantern portion 1.

Preferably integral with the top of the cover 5, and extending from its central portion outwardly in line with its major axis, is an elongated tubular boss 9, which terminates in an outwardly and upwardly flaring reflector casing 10. Hingedly secured to a lug 11 at the middle top portion of the latter, is a circular lens holder 12 containing a lens 13. Extending from the lower middle portion of the lens holder 12 is a forked lug 14 through which extends a transverse pin 15. The latter loosely passes through the upper end of an arm 16 received between the prongs of said lug 14, to pivotally support it, the lower end of said arm being threaded to receive a nut 17. To secure the free end of the lens holder 12 to the reflector casing 10, the threaded end of said arm 16 is brought upwardly to occupy a position between the prongs of a forked lug 18 extending downwardly from the lower middle portion of said reflector casing. The nut 17 has a conical inner end adapted to bear firmly against a countersunk beveled portion of the lug 18,

making it difficult for the nut to work loose after the free end of the lens holder 12 is firmly secured to the reflector casing 10.

Somewhat similar means are employed for firmly securing the cover 5 to the lower lantern portion 1. Referring to Figs. 3, 4 and 5, at each side of the cover 5 is an outwardly bulging portion 19 adapted to form an interior pocket to hold an extra lamp bulb for emergency use. At the base of each pocket 19 is an outwardly extending forked lug 20 through the prongs of which there extends a transverse pin 21. This pin loosely extends through the upper end of an arm 22 received between the prongs of said lug 20 to support it, the lower end of said arm being threaded to receive a knurled nut 23. When the cover is in place upon the lower lantern portion 1, the threaded end of each rod or arm 22 is adapted to be swung into the recessed portion of a lug 24 on each exterior side of said lantern portion, the bottom of said lug containing a countersunk beveled portion adapted to receive the conical inner end of the nut 23, to assist in preventing the latter from working loose. For the latter purpose, each nut 23 is also engaged by a coil spring 25 that surrounds the outer end of each arm between it and a circular flange 26 at the extremity of the latter. The pressure of the spring against it, assists in preventing each knurled nut 23 from working loose when the cover 5 is in place upon the lantern base 1. At the side of its recessed portion, each lug 24 has a vertical part containing a vertical hole 27 to receive the pins of any suitable supporting bracket (not shown).

On the middle top portion of the reflector casing 10 there is provided a lug 28 to which there is pivotally secured by means of a screw 29, a staple 30 which receives one end of a handle 31, the other end of which is secured to a staple 32 pivotally secured by means of a screw 33 to a lug 34 on the rear top portion of the cover 5. (See Fig. 4.) By this handle 31, which is in line with the major axis of the lantern, the latter may be conveniently carried by the hand in its natural position.

Within easy access of the fingers of the hand which carries the lantern, there is a push rod 35 which operates a switch (not shown) located in a dome 36 on top of the tubular boss 9 beneath the handle 31.

Positioned within the reflector casing 10, is a preferably silver-plated parabolic reflector 37 terminating rearwardly in a hollow neck portion 38. This neck portion 37 provides a tubular guide through which a socket 39 for a lamp bulb 40 is longitudinally movable. For the purpose of moving the bulb 40 toward or away from the lens 13, to secure a diffused or a spot light, of varying intensity, the following described focusing device is provided. Referring to Figs. 1 and 2, there is secured to the rear end of the socket 39 the right-angled portion 41 of a connecting link 42 that is preferably flat, the other end of said link being turned to grip a nut 43. The link 42 contains a transverse slot 44 through which there loosely extends a stationary pin 45 to guide said link during its reciprocating movement. Such movement is imparted to the link 42 by a threaded rod 46 which enters the nut 43 and whose outer end passes through a bushing 47 screwed into a hole provided to receive it in the rear portion of the boss 9. Fixedly secured to the outer end of the rod 46 is a knurled finger piece 48 by which said rod may be turned to impart the desired longitudinal movement to the bulb 40 through the mechanism just described. It is thus possible to conveniently and effectively focus the light by turning the finger piece 48, which is readily accessible at all times.

When the cover 5 is applied to the lantern base 1, an instantaneous electrical connection is made between the lamp socket 39, switch, and dry cells 2 and 3 by the following means. Above the terminals 49 and 50 of the dry cell 2, and the terminals 51 and 52 of the dry cell 3, there is a loose flat piece 53, preferably of elliptical shape and constructed of insulating material. Secured to the bottom portion of the flat piece 53 is a preferably hook-shaped spring contact 54 adapted to engage the terminal 52 of the dry cell 3 when the cover is in place, a similar contact 55 being secured to the bottom portion of said piece 53 at its other side, for engagement with the terminal 50 of the cell 2, the terminal 49 of the latter being connected to the terminal 51 of the dry cell 3 by a wire 56. A wire 57 leads from the spring contact 55 to the lamp socket 39, while a wire 58 leads from the spring contact 54 to the switch in the dome 36, a wire 59 connecting said switch and the lamp socket 39, all of said wires being properly insulated. It will thus be seen that when the cover 5 is applied to the lantern base 1, an instantaneous electrical connection will be made between the lamp, switch and dry cells, said connection being again broken when said cover is removed. The means above described make it possible to remove the cover 5 from the base 1 without bothering with long connecting wires, and further making it possible for the cover to be taken any distance from its base.

Having described my invention, I claim:

1. A portable electric lantern comprising a base, a source of electric energy therein, a cover adapted to be applied to said base, illuminating means within said cover, a connecting arm hingedly secured to each side of said cover, a lug on each side of said base having a recessed portion adapted to loosely

receive the lower end of each connecting arm, which is threaded, a knurled nut having a conical inner end, adapted to be applied to the threaded end of each arm, and a beveled seat provided in the recessed portion of each lug, against which the conical end of its respective nut is adapted to be screwed, to firmly hold the threaded ends of said arms in the recessed portions of their respective lugs.

2. A portable electric lantern comprising a base, a source of electric energy therein, a cover adapted to be applied to said base, illuminating means within said cover, a connecting arm hingedly secured to each side of the latter, a lug on each side of said base having a recessed portion adapted to loosely receive the lower end of each connecting arm, which is threaded, a knurled nut on the threaded end of each arm adapted to be screwed into tight engagement with its respective lug when the lower end of its respective arm is in the recessed portion of the latter, a flange on the outer end of each arm, and a spring encircling the latter between said flange and nut, to prevent the latter from working loose after it has been screwed tightly against its respective lug.

3. A portable electric lantern comprising a base, a source of electric energy therein, a cover adapted to be applied to said base, illuminating means within said cover, a reflector casing on the front end of the latter, a lens holder hingedly secured to the upper end of said reflector casing, a connecting arm hingedly secured to the lower end of said lens holder, a lug secured to the bottom portion of said reflector casing, having a recessed portion adapted to loosely receive the lower end of said connecting arm, which is threaded, a knurled nut having a conical inner end on the threaded end of said connecting arm, and a beveled seat provided in the recessed portion of said lug, against which said nut is adapted to be screwed, to firmly hold the threaded end of said arm in the recessed portion of said lug.

In testimony whereof I have hereunto set my hand this 25th day of July, 1918.

WILLIAM GRETHER.

Witness:

HOWARD S. SMITH.